

Substitute Form PTO-1449

U.S. Department of Commerce
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Attorney's Docket No.

17601-043001

Application No.

10/630,345

**Information Disclosure Statement
by Applicant**

(Use several sheets if necessary)

Applicant

Joseph A. Zupanick

Filing Date

July 29, 2003

Group Art Unit

3673

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	A1	4,106,575	08/15/1978	Bunnelle			
	A2	6,223,839 B1	05/01/2001	Fraim et al.			
	A3	6,250,391 B1	06/26/2001	Proudfoot			
	A4						
	A5						

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	B1							
	B2							
	B3							
	B4							
	B5							

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	C1	Dreiling, Tim, McClelland, M.L., and Bilyeu, Brad, "Hoizontal and High Angle Air Drilling in the San Juan Basin, New Mexico," The Brief, published by Amoco and Chevron by Murphy Publishing, Inc., Vol. 2, Issue 6, No. 54, June 1996 (9 pages)
	C2	Notification of Transmittal of the International Preliminary Report on Patentability (1 page) and International Preliminary Report on Patentability (10 pages) for International Application No. PCT/US2006/021057 mailed July 9, 2007
	C3	William P. Diamond and David C. Oyler, "Effects of Stimulation Treatments on Coalbeds and Surrounding Strata: Evidence From Underground Observations," RI 9083, Bureau of Mines Report of Investigations, 1987 (53 pages)
	C4	W.P. Diamond and D.C. Oyler, "Recent Underground Observations of Intercepted Hydraulic Stimulation in Coalbed Methane Drainage Wells," Preprint number 85-332, Society of Mining Engineers of AIME, SME-AIME Fall Meeting, October 16-18, 1985 (12 pages)
	C5	William P. Diamond, "Underground Observations of Mined-Through Stimulation Treatments of Coalbeds," Methane From Coal Seams Technology, June 1987 (11 pages)
	C6	W.P. Diamond, "Characterization of Fracture Geometry and Roof Penetrations Associated with Stimulation Treatments in Coalbeds," 1987 Coalbed Methane Symposium, November 16-19, 1987 (11 pages)

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	C7	C.M. McCulloch, Maurice Deul and P.W. Jeran, "Cleat in Bituminous Coalbeds," RI 7910, Bureau of Mines Report of Investigations, 1974 (28 pages)
	C8	B.E. Law, "The Relationship Between Coal Rank and Cleat Spacing: Implications for the Prediction of Permeability in Coal," Proceedings of the 1993 International Coalbed Methane Symposium, May 17-21, 1993 (7 pages)
	C9	C.T. Montgomery and R.E. Steanson, "Proppant Selection: The Key to Successful Fracture Stimulation," JOURNAL OF PETROLEUM TECHNOLOGY, December 1985 (10 pages)
	C10	R.W. Veatch, Jr., "Overview of Current Hydraulic Fracturing Design and Treatment Technology - Part 2," JOURNAL OF PETROLEUM TECHNOLOGY, May 1983 (12 pages)
	C11	David D. Cramer, "The Unique Aspects of Fracturing Western U.S. Coalbeds," JOURNAL OF PETROLEUM TECHNOLOGY, October 1992 (8 pages)
	C12	S.A. Holditch, J.W. Ely, R.H. Carter, and M.E. Semmelbeck, "Coal Seam Stimulation Manual, Gas Research Institute, Contract No. 5087-214-1469, April 1990 (265 pages)
	C13	Jack E. Nolde, "Coalbed Methane in Virginia," Virginia Minerals, Virginia Division of Mineral Resources, Vol. 41, February 1995 (7 pages)
	C14	C.H. Elder and Maurice Deul, "Degasification of the Mary Lee Coalbed Near Oak Grove, Jefferson County, Ala., by Vertical Borehole in Advance of Mining," RI 7968, U.S. Bureau of Mines, 1974 (23 pages)
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	C16	Peter F. Steidl, "Foam Stimulation To Enhance Production From Degasification Wells in the Pittsburgh Coalbed," RI 8286, Bureau of Mines Report of Investigations, 1978 (11 pages)
	C17	David G. Hill, "Contribution of Unconventional Gas to U.S. Supply Continues to Grow," Gas Research Institute Gas TIPS, Fall 2001 (6 pages)
	C18	Vello A. Kuuskraa and Charles F. Brandenburg, "Coalbed Methane Sparks a New Energy Industry," OIL & GAS JOURNAL, Week of October 9, 1989 (8 pages)
	C19	Walter B. Ayers Jr. and Bruce S. Kelso, "Knowledge of Methane Potential for Coalbed Resources Grows, But Needs More Study," OIL & GAS JOURNAL, October 23, 1989 (6 pages)
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	C21	Steven W. Lambert, Stanley L. Graves and Arfon H. Jones, "Warrior Basin Drilling, Stimulation Covered," OIL & GAS JOURNAL, Week of October 9, 1989 (7 pages)
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	C23	Terry L. Logan, "Western Basins Dictate Varied Operations, OIL & GAS JOURNAL, Week of October 9, 1989 (7 pages)
	C24	Vello A. Kuuskra, Charles M. Boyer II, and Richard A. McBane, "Steps to Assess Resource Economics Covered," OIL & GAS JOURNAL, Week of October 9, 1989 (6 pages)

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	C25	Richard A. Counts, "Ownership Questions Can Stymie Development of Coalbed Methane," OIL & GAS JOURNAL, Week of October 9, 1989 (6 pages)
	C26	Richard A. Schraufnagel, Richard A. McBane and Vello A. Kuuskraa, "Coalbed Methane Development Faces Technology Gaps," OIL & GAS JOURNAL, Week of October 9, 1989 (7 pages)
	C27	"US Coalbed Methane Resource Estimates, Issues Aired," Oil & Gas Journal, September 24, 2001 (2 pages)
	C28	Dr. Charles R. Nelson, "Coalbed Methane Potential of the U.S. Rocky Mountain Region," Gas TIPS, Fall 2000 (9 pages)
	C29	Dr. Charles R. Nelson, "Changing Perceptions Regarding the Size and Production Potential of Coalbed Methane Resources," Gas TIPS, Summer 1999 (9 pages)
	C30	Ala. Coalbed Methane Production Hits Record, Coal Age, May 1998 (1 page)
	C31	Charles M. Boyer II, "Introduction," Gas Research Institute, Methane From Coal Seams Technology, August 1993 (4 pages)
	C32	P.F. Steidl, "Evaluation of Induced Fractures Intercepted by Mining," Proceedings of the 1993 International Coalbed Methane Symposium, May 17-21, 1993 (12 pages)
	C33	W.P. Diamond, W.R. Bodden III, M.D. Zuber and R.A. Schraufnagel, "Measuring the Extent of Coalbed Gas Drainage After 10 Years of Production at the Oak Grove Pattern, Alabama," Proceedings of the 1989 Coalbed Methane Symposium, April 17-20, 1989 (10 pages)
	C34	W.M. Merritts, W.N. Poundstone and B.A. Light, "Removing Methane (Degasification) From the Pittsburgh Coalbed in Northern West Virginia," Bureau of Mines RI 5977, 1962 (46 pages)
	C35	M.L. Skow, Ann G. Kim and Maurice Deul, "Creating a Safer Environment in U.S. Coal Mines," U.S. Bureau of Mines Impact Report, 1980 (56 pages)
	C36	Stephen W. Lambert, Michael A. Trevits, and Peter F. Steidl, "Vertical Borehole Design and Completion Practices Used to Remove Methane Gas From Mineable Coalbeds," U.S. Dept. of Energy, 1980 (173 pages)
	C37	M.A. Trevits, S.W. Lambert, P.F. Steidl and C.H. Elder, "Methane Drainage Through Small-Diameter Vertical Boreholes," Chapter 9 in U.S. Bureau of Mines Bulletin B687 entitled Methane Control Research: Summary of Results, 1964-80, 1988 (25 pages)
	C38	C.M. Boyer II and S.R. Reeves, "A Strategy for Coalbed Methane Production Development Part III: Production Operations," Proceedings of the 1989 Coalbed Methane Symposium, April 17-20, 1989 (5 pages)
	C39	R.A. Mills and J.W. Stevenson, "History of Methane Drainage at Jim Walter Resources, Inc.," Proceedings of the 1991 Coalbed Methane Symposium, May 13-16, 1991 (9 pages)
	C40	Richard A. Schraufnagel, "Coalbed Methane Production," Chapter 15 of Hydrocarbons from Coal, American Association of Petroleum Geologists, 1993 (21 pages)
	C41	Curtis H. Elder, "Effects of Hydraulic Stimulation on Coalbeds and Associated Strata," Bureau of Mines RI 8260, 1977 (25 pages)

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	C42	A Guide to Coalbed Methane Reservoir Engineering, published by Gas Research Institute, GRI-94/0397, pages 2.11-2.12, 1996 (3 pages)
	C43	Well Performance Manual, Schlumberger, pages 3-1 and 3-2, August 1993 (4 pages)
	C44	Michael Zuber, "Coalbed Methane Engineering Methods," The Society of Petroleum Engineers, October 2006 (161 pages)
	C45	James V. Mahoney, P.B. Stubbs, F.C. Schwerer III and F.X. Dobscha, "Effects of a No-Proppant Foam Stimulation Treatment on a Coal-Seam Degasification Borehole," Journal of Petroleum Technology, November 1981 (9 pages)
	C46	S.J. Jeu, T.L. Logan and R.A. McBane, "Exploitation of Deeply Buried Coalbed Methane Using Different Hydraulic Fracturing Techniques in the Piceance Basin, Colorado and San Juan Basin New Mexico," Society of Petroleum Engineers, SPE 18253, copyright 1988 (11 pages)
	C47	Stephen E. Laubach, Carol M. Tremain and Walter B. Ayers, Jr., "Coal Fracture Studies: Guides for Coalbed Methane Exploration and Development," Journal of Coal Quality, Volume 10, No. 3, July-September 1991 (8 pages)

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